ROZBIANSKAYA, A.A.; SALTYKOVA, V.S., otv. red.; SHILLER, V.A., otv. za vyp.

[Determination of indium in cassiterite] Opredelenie indiia v kassiterite. Moskva, 1960. 8 p. (Akademiia nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Metodicheskie materialy, no.2) (MIRA 15:6)
(Indium) (Cassiterite)

VERSHKOVSKAYA, O.V., kand.geologo-mineral.nauk; KRASNOVA, V.S.; SALTYKOVA, V.S., kand.geologo-mineral.nauk; PERVUKHINA, A.Ye. Prinimal uchastiye LIZUNOV, N.V., kand.geologo-mineral.nauk. VLASOV, K.A., glavnyy red.; SHCHERBINA, V.V., doktor geol.-mineral.nauk, otv.red.; MERGASOV, G.G., red.izd-va; NOVICHKOVA, N.D., tekhn.red.

[Gallium; methods of study, distribution in rocks and minerals, types of deposits. Brief data on the uses and economic aspects of gallium in foreign countries] Gallii; metody issledovanii, rasprostranenie v gornykh porodakh i mineralakh, tipy mestorozhdenii. Kratkie svedeniia po primeneniiu i ekonomike galliia v zarubezhnykh stranakh. Moskva, Izd-vo Akad.nauk SSSR, 1960. 145 p. (MIRA 13:9)

1. Chlen-korrespondent AN SSSR (for Vlasov).
(Gallium)

PHASE I BOOK EXPLOITATION SOV/4908

Vershkovskaya, O. V., V. S. Krasnova and V. S. Saltykova

Galliy: metody issledovaniy, rasprostraneniye v gornykh porodakh i mineralakh, tipy mestorozhdeniy (Gallium: Research Methods, Occurrences in Rock Formations and Minerals, Types of Deposits) Moscow, Izd-vo AN SSSR, 1960. 145 p. Errata slip inserted. 4,000 copies printed. pp. 137-145 written by Pervukhina, A. Ye.: Kratkiye svedeniya po primeneniyu i ekonomike galliya v zarubezhnykh stranakh (Concise Information on the Application and Economy of Gallium in Foreign Countries)

Sponsoring Agency; Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.

Chief Ed.: K. A. Vlasov, Corresponding Member, AS USSR: Resp. Ed.: V. V. Shcherbina, Doctor of Geological and Mineralogical Sciences; Ed. of Publishing House: G. G. Mergasov; Tech. Ed.: N. D. Novichkova.

PURPOSE: This book is intended for scientists studying the mineralogy, geochemistry, and crystallochemistry of gallium.

~~Card 1/6~~

COVERAGE: The book reviews the available data on the mineralogy, geochemistry, and crystallochemistry of gallium, and on its occurrence in rocks and deposits of various genetic types in the Soviet Union and in other countries. The work was carried out at the Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR (Institute of Mineralogy, Geochemistry, and Crystallochemistry of Rare Elements, AS USSR) under the direction of O. V. Vershkovskaya, Candidate of Geological and Mineralogical Sciences. The chemical determinations of gallium in minerals were made by Ye. A. Fabrikova, Candidate of Chemical Sciences, and by V. M. Romadova, Senior Laboratory Technician. The first chapter was written by V. S. Saltykova, Candidate of Geological and Mineralogical Sciences, except for the section on spectral analysis, written by L.V. Lizunov, Candidate of Geological and Mineralogical Sciences; the second and third chapters by V. S. Krasnova; the remainder by O.V. Vershkovskaya, except the section on gallium technology outside the USSR, written by A. Ye. Pervukhina. The authors thank T.N. Shadlun and V.V. Shcherbina, Doctors of Geological and Mineralogical Sciences, and V.I. Smirnov, Corresponding Member, AS USSR. There are 142 references, including 18 in the section on foreign developments, mostly Soviet (including five translations.).

S/007/61/000/005/002/002
B107/B223

AUTHORS: Vershkovskaya, O. V., Saltykova, V. S.

TITLE: Gallium in rocks enclosing fluorite-sulfide mineralization

PERIODICAL: Geokhimiya, no. 5, 1961, 440-445

TEXT: The behavior of gallium during the following hydrothermal alteration of the rock by mineral solutions was examined. This was studied in two deposits in Soviet Central Asia. The deposit of Naugarzan, Kuraminskiy Range, consists mainly of granodiorites which are, according to N. P. Vasil'kovskiy, Middle Carboniferous. In the deposit of Takob, Gissarskiy Range, the mineralizations are enclosed by porphyroid biotite granite, originating from the Upper Carboniferous according to I. S. Gol'dberg. The mineralizations consist of hydrothermal fissure filling: quartz, fluorite, calcite, galenite, sphalerite, and in Naugarzan also baryta. The sphalerites contain 0.001 to 0.09% gallium; the mean value for Naugarzan is 0.0227 and for Takob 0.0174% (mean value from 100 determinations). For the present study a silicate analysis was carried out of unchanged and hydrothermally changed granodiorite

(Naugarzan) and granite (Takob) (Table 1). Gallium was determined in various samples of these rocks and in the individual minerals by a method developed by V. S. Saltykova and Ye. A. Fabrikova (Ref. 3: Zh. analit. khimii 13, 63, 1958). This method allows the determination of 0.0001 % Ga with a maximum error of 5-6 %. The analyses were carried out by V. S. Saltykova and B. Volkov. The rocks examined contained 0.002 % Ga almost without exception. Thus, the gallium content remains constant in the hydrothermal change, although considerable quantities of aluminum were removed. Thus, the high content of gallium in sphalerite is not due to the leaching of the enclosing rock. Table 2 lists the gallium contents in the individual minerals. L. A. Borisenok and L. V. Tauson are mentioned. The silicate analyses were carried out by A. Laryukova and V. Kalinina. There are 3 tables and 7 Soviet-bloc references.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva (Institute of Mineralogy, Geochemistry, and Crystallochemistry of Rare Elements, AS USSR, Moscow)

SUBMITTED: November 2, 1960

KOGAN, B.I.; KAL'ZHANOVA, Ye.G.; SAL'TINA, L.V.; SOLODOV, N.A.; DMITRIYEVA, O.P.; Prinimali uchastiye: UKHANOVA, N.I.; PERVUKHINA, A.Ye.; KAZANTSEVA, V.G.; ULANOVSKAYA, V.D.; VLASOV, K.A., glav. red.; LIZUNOV, N.V., otv. red.; PYATENKO, Yu.A., otv. red.; SALTYKOVA, V.S., otv. red.; SLEPNEV, Yu.S., otv. red.; FABRIKOVA, Ye.A., otv. red. PODOSEK, V.A., red. izd-va; GOLUB', S.I., tekhn. red.

[Rare alkali metals (lithium, rubidium, and sesium); a bibliography on their geochemistry, mineralogy, crystal chemistry, geology, the analytic methods of their determination, and their economics]Redkie shchelochnye metally (litii, rubidii i tsezii); bibliografiia po geokhimii, mineralogii, kristallokhimii, geologii, analiticheskim metodam opredeleniia i ekonomike. Sost. B.I.Kogan i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 327 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. 2. Chlen-korrespondent Akademii nauk SSSR (for Vlasov).

(Bibliography--Alkali metals)

VLASOV, K.A.; BELOV, N.V.; VOL'FSON, F.I.; GENKIN, A.D.; GINZBURG, A.I.; LUKIN, L.I.; KORZHINSKIY, D.S.; SALTYKOVA, V.S.; SAUKOV, A.A.; SOKOLOV, G.A.; SHCHERBAKOV, D.I.; SHADLUN, T.N.

Konstantin Avtonomovich Nenadkevich, 1830-1963; obituary. Geol. rud. mestorozh. 6 no.1:123-125 Ja-F '64.
(MIRA 17:11)

ARTYUKHOVA, O.A.; VAKSENBURG, V.Ya.; PETROV, L.A.; SALTYKOVA, Ye.S.; SAMOKHVALOV, M.M.

New types of germanium p-n-p junction triodes. Poluprov. prib. i ikh prim. no.2:46-77 '57. (MIRA 11:6)
(Transistors)

SALTYKOVA, E. S.

A. V. Krasilov, E. S. SALTYKOVA, A. P. Polyanov: "Power germanium triodes." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

Data are presented on power seminconducting triodes manufactured here and abroad. A newly developed triode with 100 wt power dissipated by the collector is described.

The construction of the new power triode is vitreous-metallic, the hermetic sealing is guaranteed by using cold welding to connect the shell to the flange. The thermal resistivity of the triode frame is 0.6° C/wt. The limiting junction temperature is + 90° C .

Triode characteristics are presented and possible ranges of application are analyzed.

24(6), 7(7), 8(2)

AUTHORS: Krasilov, A. V., Polyanov, A. B., Saltykova, Ye. S.

SOV/105-59-1-18/29

TITLE: A Powerful Germanium Triode (Moshchnyy germaniyevyy triod)

PERIODICAL: Elektrichestvo, 1959, Nr 1, pp 72-75 (USSR)

ABSTRACT: The powerful type 207 germanium triode makes it possible to use semiconductor devices in apparatus which control capacities of over 1 kw. The characteristic feature of the triode is the use of cold welding for sealing the body which greatly increases the reliability and stability of the apparatus. The apparatus can work in currents up to 20 a where the triode still has sufficiently good amplifying properties, and power losses in the apparatus do not bring about an essential reduction of efficiency. Such high current intensities were made possible by using an emitter with large surface (0.5 cm^2), by using efficient emitter alloys and a ring-shaped construction of the emitter. The transconductance of the triode is between 25 and 40 a/v. The triode 207 has a low input impedance amounting to 0.4-0.6 ohms in the circuit scheme with earthed emitter at a commutator current of 20 a. This is the 40th part of the

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input impedance in the most powerful triode at present, P 4 (made in the USSR). With large electrode dimensions and with the use of commutator alloy, it was possible to maintain the high puncture voltages at the commutator. The apparatus work for 2 nominal voltages - 40 and 60 volts. The high current intensities and the high admissible voltage at the commutator permit the new apparatus to commute a power of 1200 w, the control power amounting to about 1 w. The apparatus permits to control up to 150 w at the commutator on condition that the body temperature does not exceed 20°C. This can be practically achieved by using special measures for cooling, for instance with running water. It is very important that in solving the problem of controlling a high power, it was possible to reach a small thermal resistance commutator-body. This is achieved at the expense of a large commutator surface and with the use of a massive copper flange with good thermal conductivity. The apparatus stands a power of 50 w without additional heat flow, if this power does not last more than 1 minute. The new [illegible] power triode has a good performance over the whole range of audio frequencies in a circuit scheme with common emitter. The limiting frequency is 100-200

kilocycles. The most sensitive parameter is the commutator return current. At about 90°C, it increases rapidly but does not exceed a few milliamperes. The high-power triode 207 can be used in different radiotechnical circuit schemes and electrotechnical equipment. Important is the use of high-power triodes in rotary converters where a direct current of low voltage is transformed to direct current of high voltage or to alternating current. Here the triode works very economically as a "key" by transforming powers in the order of magnitude of 1 kw with losses of about 15-20 w within the triode, with the use of a push-pull connection scheme. Not less economical is the use of this triode as contactless switch or starter. There are 9 figures.

SUBMITTED: July 21, 1958

Card.3/3

SALTYKOVA, Yu. V.

TERENT'YEV, A.P.; KOST, A.N.; SALTYKOVA, Yu.V.; YERSHOV, V.V.

Synthesis with help of acrylic acid nitril. Part 29: Cyanoethylation of some ketones. Zhur. ob. khim. 26 no.10:2925-2928 O '56. (MIRA 11:3)

1. Moskovskiy Gosudarstvennyy universitet.
(Ethylation) (Ketones)

GOVOROVA, G.L.; SALTYKOVA, Z.A.; SHCHELKACHEV, V.N.

Analyzing the rates of withdrawal and depletion of reserves in various stages of the development of oil fields in the United States. Trudy MINKHiGP no.48:260-273 '64.

(MIRA 18:3)

LYUSTIKH, Ye.N.; SALTYKOVSKIY, A.Ya.

Some hypotheses of the origin of the granitic layer of the earth. Geokhimiia no.4:371-373 '60. (MIRA 13:10)

1. O.J. Schmidt Institute of Physics of the Earth, Academy of Sciences, U.S.S.R., Moscow.
(Granite)

LYUSTIKH Ye. N.; SALTYKOVSKIY, A. Ya.

Formation of the granite layer of the earth's crust. Geokhimiia no.4:293-297 '61. (MIRA 14:5)

1. O. Yu. Schmidt Institute of Physics of the Earth, Academy of Sciences U.S.S.R., Moscow.
(Granite)

SALTYKOVSKIY, A.Ya.

Some petrochemical characteristics of continental and oceanic alkali olivine basalts. Sov. geol. 6 no.10:3-11 O '63. (MIRA 17:1)

1. Institut fiziki Zemli imeni O.Yu. Shmidta AN SSSR.

SALTYKOVSKIY, A.Ya.

A conference on the upper mantle. Priroda 52 no.4:106-107 '63.
(MIRA 16:4)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR, Moskva.
(Earth--Internal structure)

SALTYKOVSKIY, A.Ya.

New type of tectonic structures. Priroda 52 no.11:113-114 '63. (MIRA 17:1)

1. Institut fiziki Zemli AN SSSR im. O.Yu. Shmidta, Moskva.

KISELEV, A.I.; SALTYKOVSKIY, A.Ya.

Some petrochemical characteristics of Middle Jurassic effusives in southwestern Transbaikalia. Biul. MOIP. Otd. geol. 39 no.6:96-110 N-D '64. (MIRA 18:3)

SALTYKOVSKIY, M. I.

Mbr., Agriculture Inst., Dnepropetrovsk, -1944-. "On Selecting Pairs in Crossing and Breeding Winter Hardy Wheat," Dok. AN, 25, No. 9, 1939; "A Method for Determination of Cold-Resistance of Winter Cereals," ibid., 28, No. 6, 1940; "Synthesis of Winter-Hardy Wheats," ibid., 39, No. 7, 1943; "Frequency of Transgressions of Winter Hardiness in Wheat Hybrids," ibid., 44, No. 5, 1944; "A Method for Increasing Winterness in Wheats," ibid., 45, No. 8, 1944; "Increase in Winterness of Wheat," ibid., 52, No. 3, 1946. & Ye.S. Saprygina

SALTYKOVSKIY, M.I.

Saltykovskiy, M.I. and Zaprygina, Ye. S. "A method for analyzing the resistance to cold in winter grains," Trudy Dnepropetr. s.-kh. in-ta, Vol. II-III, 1940, p. 169-84,- Bibliog: 12 items.

SO: U-2021, 14 April 53, (Letopis'Zhurnal 'Nykh Statey No. 16, 1949)

SALTYKOVSKIY, M.I; SAPRYGINA, Ye.S.

Theory of synthesis of physiological characteristics. Doklady Akad. nauk SSSR 76 no.2:277-280 1951. (CIML 20:4)

1. Presented by Academician N.A. Maksimov 9 November 1950.

SALTYKOVSKIY, M.I.; SAPRYGINA, Ye.S.

Effect of winter drought on winter crops. Trudy Inst. fiziol. rast. 8 no.1:380-386 '53. (MLRA 6:12)

1. Dneptropetrovskiy sel'skokhozyaystvennyy institut.
(Plants, Effect of aridity on)

L 44175-65 EWT(d)/EED-2/EWP(1) Pg-4/Pq-4/Pk-4/P1-4 IJP(c) GG/BB

ACCESSION NR: AP5011737 UR/0146/65/008/002/0075/0079 28 B

AUTHOR: Saltykovskiy, O. M.

TITLE: The problem of constructing twin-scale high-accuracy angle - code converters 16

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 2, 1965, 75-79

TOPIC TAGS: twin scale transducer, high-resolution encoder, angle transducer, angle code converter, converter synchronization, reductosyn sensor

ABSTRACT: In the converters discussed in the technical literature, insufficient study has been directed at the problem of synchronizing the filling pulse frequency with that of the sensor power supply, as well as the requirements for circuit element stability and coarse sensor accuracy. Circuits for excluding indefiniteness of readings and matching scale readings have not been worked out with the required thoroughness, readings being possible in the existing systems only when the phase of the fine sensor stage is at definite values. Finally, the methods presently known for compensating feed instability do not provide sufficient stabilization of supply voltage amplitude and phase. An attempt is made in this article to fill this gap. The author considers problems relating to the construc-

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L 44775-65

ACCESSION NR: AP5011737

tion of twin-scale transducers of high accuracy using sensors with [illegible]trical reduction. Stability requirements are discussed, along with such factors as methods of synchronization, independent fine scale readings, read-out system instability compensation, and sensor feed instability compensation. Possible circuit arrangements which may be used to combat these forms of parameter deviations are proposed and structurally explained. The methods described for stabilizing the circuit parameters make it possible to achieve twin-scale transducer accuracy on the order of 16-18 binary bits. The use of reductosyn and inductosyn type sensors is proposed for high-accuracy transducers, along with the use of triple-scale sensors in order to reduce the requirements for electronic circuit stability. When using twin-scale systems, with a need to reduce the conversion time, the author finds that a synchronization arrangement incorporating an audio-frequency generator provides the best solution from the point of view of stability and a minimum of components. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 19Jun64 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 002 OTHER: 001

Card 2/2

L 5287-66 EWT(d)/EWT(m)/EPF(c)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l) DJ
ACC NR: AP5022043 SOURCE CODE: UR/0286/65/000/014/0114/0114

AUTHOR: Saltynskiy, Ye. M. 44 55

ORG: none

24
23

TITLE: Hydraulic press. Class 58, No. 173121

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 114

TOPIC TAGS: hydraulic press, 14 hydraulic device, hydraulic liquid 11 44 55

ABSTRACT: This Author Certificate presents a hydraulic press with movable columns connected to a crosspiece which moves with them (see Fig. 1). The press also contains a motion synchronizer and a drive with cylinders placed below the columns. To prevent the crosspiece from slanting in respect to the columns and to diminish the size of the press, the movable columns are hinged to the crosspiece, and the synchronizer of the working liquid feed (motion sinchronizer) is placed between the drive cylinders.

Card 1/2 UDC: 621.226

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L 5287-66
ACC NR: AP5022043

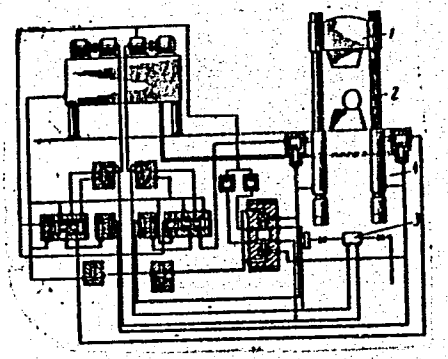

Fig. 1. 1- crosspiece;
2- movable columns;
3- synchronizer;
4- cylinders

Orig. art. has: 1 figure.

SUB CODE: IE/ SUBM DATE: 19Sep55/ ORIG REF: 000/ OTH REF: 000

Card 2/2

SALTYSKIY, YE. I.

"Use of the statistical method in communal hygenic studies."

Report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists. 1959

MALYSHEVA, S.M.; SALTYSOVA, S.I.; SHAKHOVA, L.P.

Treatment of sterility with the mud of the Dzhalal- Abad health resort. Sov. zdrav. Kir. no.4/5:73-77 Jl-O'63 (MIRA 17:1)

1. Iz Kirgizskogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii (dir.-dotsent B.V. Babakhanov).

SALUGA, R.; MEDONIS, A., red.; VYSOMIRSKIS, C., tekhn. red.

[Kernave] Kernave. Vilnius, Valstybine politines ir moklines literaturos leidykla, 1960. 1 v. (MIRA 15:5)
(Kernave region--Description and travel)

SALUKHOV, F. A., Candidate of Tech Sci (diss) -- "A comparative investigation of the technological properties of the basic varieties of spring wheat in the south-west". Odessa, 1958. 20 pp (Min Higher Educ Ukr SSR, Odessa Tech Inst im I. V. Stalin), 150 copies (KL, No 20, 1959, 113)

SALUKHOV, F.A.

Comparative study of the technological properties of principal wheat varieties raised in southeastern Russia. Izv. vys. ucheb. zav.; pishch. tekh. no. 2:3-10 '58. (MIRA 11:10)

1. Orenburgskiy mel'zavod No. 6.
(Orenburg Province--Wheat--Varieties)

SALUKHOV, F., inzh.

Technological properties of basic varieties of wheat growing in south-eastern steppe of the U.S.S.R. Muk.-elev. prom. 24 no.12:3-6 D '58. (MIRA 12:1)

1.Orenburgskaya mel'nitsa No.6.
(Volga Valley--Wheat--Varieties)

SALUKHOV, V.M.; BLAGUSHIN, P.D.

She helped the lagging communication enterprise twice. Vest. [redacted]zi 21 no.10:28 O '61. (MIRA 14:10)

1. Nachal'nik Ivanovskoy pochtovo-telegrafnoy kontory (for Salukhov).
(Telecommunication--Employees)

SALUKVADZE, B.A.

Calculation of a hinged thin plate of trapezoid contour on an elastic foundation. Soob. AN Gruz. SSR 27 no.3:307-312 S '61. (MIRA 15:3)

1. Ordena Trudovogo Krasnogo Znameni Gruzinskiy politekhnicheskiy institut imeni Lenina, Tbilisi. Predstavleno akademikom O. D. Oniashvili.

(Elastic plates and shells)

SALUKVADZE, B.A.

Static and dynamic calculation of beams on single-layer and double-layer elastic cushions. Trudy GPI [Gruz.] no.1: 109-116 '63.

Calculating a hinged slab of parabolic form lying on an elastic base. Ibid.:117-121

(MIRA 18:2)

SALUKVADZE, G.N.

Observations of Arend-Roland's comet (1956 h) and of Mrkos' comet (1957 d) at the Abastuman Astrophysical Observatory. Astron. tsir. no.190:6-8 Mr '58. (MIRA 11:9)

1. Abastumanskaya astrofizicheskaya observatoriya.
(Comets)

SALUKVADZE, G.N.

Relative positions, stellar magnitudes, and spectral classes of stars of Trapezium type multiple systems. Biul. Abast. astrofiz. obser. 32: 69-122 '65. (MIRA 18:10)

DZHAPIASHVILI, V.P.; SALUKVADZE, G.N.

Photographic photometry of comet Arend-Roland (1956 h). Biul. Abast. astrofiz. obser. 32:155-159 '65. (MIRA 18:10)

SALUKVADZE, G.N., kand fiziko-matem. nauk

Observatory on Mount Kanobili. Zem. i vsel. 1 no.1:65-70 Ja-F '65.
(MIRA 18:7)

DZHAPIASHVILI, V.P.; SALUKVADZE, G.N.

Observations of lunar occultations of stars in Abastumani in the first quarter of 1961. Astron.tsir. no.221:12-13 Ap '61. (MIRA 14:11)

1. Abastumanskaya astrofizicheskaya observatoriya.
(Occultations)

SALUKVADZE, G.N.

Photographic observations of minor planets. Biul.Abast.astrofiz.-obser. no.26:89-93 '61. (MIRA 15:3)
(Planets, Minor)

SALUKVADZE, G.N.

Using the 40 cm.refractor in plotting a three-color photometric system. Biul.Abast.astrofiz.obser. no.26:105-127 '61.
(MIRA 15:3)

(Telescope) (Photometry, Astronomical)

SALUKVADZE, G.N.; BEYTRISHVILI, I.R.

Observations of Encke-Bakulund's comet in Abastumani. Astron. tsir. no.226:3-4 O '61. (MIRA 16:1)

1. Abastumanskaya astrofizicheskaya observatoriya. (Comets)

KALANDADZE, N.B.; SALUKVADZE, G.N.; FISHKOVA, L.M.

Relative transmittance of the objective of the 40cm. refractor and of the correcting lens for the 36cm. Schmidt telescope of the Abastumani Astrophysical Observatory. Biul. Abast. astrofiz. obser. no.28:205-207 '62. (MIRA 16:7)
(Abastumani astrophysical observatory)

29243
S/103/61/022/010/002/018
D274/D301

13.2000

AUTHOR: Salukvadze, M. Ye. (Moscow)

TITLE: Analytical design of controllers: the case of constant disturbances

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 10, 1961 1279-1287

TEXT: Optimum linear systems under constant disturbances are considered. Optimum-controller equations are derived in analytical form which permit designing the controller by ordinary sensing—and control elements. The disturbed motion of the system is described by the equations

$$\dot{\eta}_k = \sum_{\alpha=1}^{n} b_{k\alpha}\eta_\alpha + m_k\xi + f_k(t) \quad (k=1,\ldots,n) \tag{2.1}$$

where η_k are generalized coordinates of the process (plant), ξ --the coordinate of the control element, f_k--continuous and bounded functions of time which describe the external disturbances, b and m--constant

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Analytical design of...

parameters of the process and control element. The coordinates η_k satisfy the boundary conditions

$$\eta_1(0) = \eta_{10}, \eta_2(0) = \eta_{20}, \ldots, \eta_n(0) = \eta_{n0},$$
$$\eta_1(\infty) = \eta_2(\infty) = \ldots = \eta_n(\infty) = 0. \quad (2.2)$$

The functions ξ, $\eta_1, \ldots \eta_n$ are sought, belonging to class C_1, connected by Eq. (2.1), and minimizing the integral

$$I(\xi) = \int_0^\infty V dt \quad (2.3)$$

of the positive-definite quadratic form of type

$$V = \sum_{k=1}^{n} a_k \eta_k^2 + c\xi^2 \quad (2.4)$$

This integral criterion is closely related to the results of A. M. Letov

Analytical design of...

(Ref. 3: Avtomatika i telemekhanika, v. 21, no. 4, 5, 6, 1960). The problem consists in deriving the equations of a controller which, in conjunction with Eq. (2.1) forms a stable system of maximum resistance to the external disturbances f_k. This problem constitutes Lagrange's variational problem. Thereby the functions ξ, $\eta_1, \ldots, \eta_n$ of class C_1 are sought which minimize the functional Eq. (2.3) and satisfy the boundary conditions Eq. (2.2) and the related equations

$$g_k = \dot{\eta}_k - \sum_{\alpha=1}^{n} b_{k\alpha}\eta_\alpha - m_k\xi - f_k(t) = 0 \quad (k = 1, \ldots, n). \tag{3.1}$$

After transformations, one obtains the sought-for controller equations (which satisfy the principle of Poncelet-Chikolev):

$$\xi = \sum_{\alpha=1}^{n} p_\alpha \eta_\alpha + \sum_{\alpha=1}^{n} p_{n+\alpha} \sum_{i=1}^{n} D_i e^{-\mu_\alpha t} \int e^{\mu_\alpha t} f_i(t)\, dt. \tag{3.15}$$

For the case of n control elements, one obtains

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Analytical design of...

$$\xi_k = \sum_{\alpha=1}^{n} p_\alpha^{(k)} \eta_\alpha + \sum_{\alpha=1}^{n} p_{n+\alpha}^{(k)} \sum_{i=1}^{n} \overline{D}_i e^{-\overline{\mu}_\alpha t} \int e^{\overline{\mu}_\alpha t} f_i(t)\, dt \quad (k = 1, \ldots, n) \tag{3.17}$$

The quality of the transient process depends on the choice of r in equation

$$\xi = \sum_{\alpha=1}^{n} p_\alpha \eta_\alpha + \sum_{\alpha=1}^{n} p_{n+\alpha} \sum_{i=1}^{n} D_i \sum_{r} \frac{(-1)^r}{\mu_\alpha^{r+1}} f_i^{(r)}(t) \qquad (r = 0, 1, 2, \ldots) \tag{3.18}$$

The larger r, the closer the transient process to the optimum in the sense of Eq. (3.3); this choice is effected on the basis of actual feasibility of design. An example is given involving a first-order system. Further, a simple self-adaptive system is considered. The disturbed process (plant) is described by equations of type

$$\dot{\eta}_k = \sum_{\alpha=1}^{n} b_{k\alpha} \eta_\alpha + m_k \xi \quad (k = 1, \ldots, n), \tag{6.1}$$

The parameters b and m can vary on a given bounded set D of real

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Analytical design of...

numbers; the variation is random, but in such a way that b and m remain constant over a sufficiently long interval of time. The adaptation of the system to the change in b and m is considered. A reference-model is introduced for that purpose, described by equations

$$\ddot{\eta}_k = \sum_{\alpha=1}^{n} b^*_{k\alpha}\eta^* \qquad (k = 1,\ldots, n) \tag{6.2}$$

and condition

$$\eta_k(0) = \eta^*_k(0) \qquad (k = 1,\ldots,n). \tag{6.3}$$

It is assumed that this model is asymptotically stable. An analyzer is connected to the model which compares the transient process of the model with that of the actual process. A controller is sought which minimizes the integral

$$I = \int_0^\infty \left[\sum_{k=1}^{n} a_k (\eta_k - \eta^*_k)^2 + c\xi^2\right] dt \tag{6.4}$$

Thereby the process is under the influence of the constant disturbances

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Analytical design of...

$$f_k(t) = \sum_{\alpha=1}^{n} (b_{k\alpha} - b^*_{k\alpha})\, \eta^*_\alpha \qquad (k = 1, \ldots, n) \tag{6.7}$$

The equation of the sought-for controller is precisely Eq. (3.15) where $f_k(t)$ is determined by Eq. (6.7). The parameters b and m can be experimentally determined. This can be done by methods given in the references. There are 1 figure and 16 references: 9 Soviet-bloc and 7 non-Soviet-bloc (including 3 translations into Russian). The references to the English-language publications read as follows: N. Wiener, Nonlinear Problems in Random Processes, Massachusetts, 1960; A. Bose, A Theory of Nonlinear Systems, Massachusetts Institute of Technology, Research Laboratory of Electronics, Technical Report, no. 309, May 15, 1956; G. Smith, Synthesis of a Self Adaptive Autopilot for a Large Elastic Booster, IRE International Convention Record, Part 4-Automatic Control; Information Theory, March 21-24, 1960; R. E. Kalman, Design of a Self-Optimizing Control System, 57-IRD-12.

SUBMITTED: February 7, 1961

Card 6/6

S/103/62/023/006/002/012
D230/D308

16.8000

AUTHOR: Salukvadze, M.Ye. (Moscow)

TITLE: Analytical design of optimal controllers with continuously-acting disturbances

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 6, 1962, 721-731

TEXT: An extension of the author's previous work (Avtomatika i telemekhanika, v. 22, no. 10, 1961). The present paper deals with the same problem using for its solution R. Bellman's method of dynamic programming and A.M. Lyapunov's stability theory. A theorem for a given optimum control satisfying Lyapunov's conditions of asymtotic stability is presented and proof is given. The solution obtained conforms to the combination control principle in that it contains components of the continuous disturbances. A case of r controlling elements is considered and optimal solution in a closed domain is given. Comparison is made between the results obtained by

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classical variational methods and those obtained using dynamic programming and the stability theory; both methods yield identical solutions. However, the method presented has the following advantages over the classical variational method: (i) it demonstrates the optimum of the controlling action in terms of adequacy, (ii) the range of permissible control is very wide. The author acknowledges the assistance of A.M. Letov. The reference to the English-language publication reads as follows: R.E. Bellman, I. Glicksberg, O.A. Cross. Some aspects of the Mathematical Theory of Control Processes. The RAND Corporation, Santa Monica, California, 1958.

SUBMITTED: January 2, 1962

SALUKVADZE, M.Ye. (Tbilisi)

Problem concerning the synthesis of an optimal controller in linear systems with delay subject to continuous action of disturbances. Avtom.i telem. 23 no.12:1595-1601 D '62. (MIRA 15:12)

(Automatic control)

SALUKVADZE, M. YE.

AID Nr. 981-7 3 June

ANALYTIC DESIGN OF AN OPTIMAL CONTROLLER (USSR)

Salukvadze, M. Ye. Avtomatika i telemekhanika, v. 24, no. 4, Apr 1963, 437-446. S/103/63/024/004/001/014

A study is made of the problem of an analytic design of optimal controllers in the case when the disturbed motion of an object subjected to constantly acting external disturbances is described by a system of linear nonhomogeneous differential equations with variable coefficients. From all admissible control functions $\xi = \xi(\eta, t)$, where η is a deviation of the coordinate of a controlled object from its given value, the problem is to determine a control function minimizing the functional

$$I(\xi) = \int_0^{\infty} \varkappa(t) \left(\sum_{k=1}^{n} a_k \eta_k^2 + c\,\xi^2 \right) dt, \qquad (1)$$

where $\varkappa(t)$ is a continuous, positive, nondecreasing function and a_k, c are constants. For the solution of the problem, a combination of the method of

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AID Nr. 981-7 3 June

ANALYTIC DESIGN [Cont'd] S/103/63/024/004/001/014

dynamic programing and the theory of stability of motion is utilized. From optimality conditions, a formula for determining the optimal ξ is written in terms of the function $W(\eta, t)$, the determination of which is sought for the linear part of the ξ curve. Taking $W(\eta, t) = \varkappa(t)\ W^*(\eta, t)$, a partial differential equation for $W^*(\eta, t)$ is derived, and the solution is sought in the form of a sum of a definite-positive function $W_2^*(\eta, t)$ having the quadratic form of a linear function $W_1^*(\eta, t)$ and a time function $W_0^*(t)$. Three relations for these functions are derived, and it is shown that the problem of determining the $W^*(\eta, t)$ is reduced to determining $W_2^*(\eta, t)$. The procedure for the determination of $W_2^*(\eta, t)$ is described. It is concluded that when $W_2^*(\eta, t)$ is determined, then $W^*(\eta, t)$ will be a Lyapunov function. The law of designing the optimum controller in the linear part is given. [LK]

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ACCESSION NR: AP4036506 S/0103/64/025/005/0650/0652

AUTHOR: Salukvadze, M. Ye. (Tiflis)

TITLE: Invariance of optimum controllers

SOURCE: Avtomatika i telemekhanika, v. 25, no. 5, 1964, 650-652

TOPIC TAGS: automatic control, optimum automatic control, automatic controller, automatic controller invariance

ABSTRACT: The problem of analytically constructing an optimum controller under continuous-disturbance conditions was considered by the author in Avtomatika i telemekh., v. 23, no. 6, 1962. The solution, given as a sum of a linear form $\frac{1}{2c}\sum_{i=1}^{n}\frac{\partial W_3}{\partial \eta_i}m_i$ and a time function $\frac{1}{2c}\sum_{i=1}^{n}\frac{\partial W_3}{\partial \eta_i}m_{i0}$ corresponded to the principle of combination (deviation- and disturbance-dependent) control. The

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ACCESSION NR: AP4036506

present article analyzes those conditions under which the solution of the above optimum problem would be invariant with respect to external disturbances. It is proven that no such condition can exist. Orig. art. has: 14 formulas.

ASSOCIATION: none

SUBMITTED: 30Sep63 DATE ACQ: 03Jun64 ENCL: 00

SUB CODE: DP, IE NO REF SOV: 003 OTHER: 000

Card 2/2

SALUKVADZE, M.A.

Effect of novocaine on the periodic motor activity of the stomach. Soob.AN Gruz.SSR 22 no.5:581-586 My '59.
(MIRA 12:11)

1. Tbilisskiy gosudarstvennyy meditsinskiy institut. Predstavleno chlenom-korrespondentom Akademii A.N.Bakuradze.
(NOVOCAINE) (STOMACH)

GIPSHIDZE, N. N.; CHUMBURIDZE, T. I.; TKESHELASHVILI, L. K.; TVILDIANI, D. D.; TORDIYA, M. V.; DUMBADZE, Z. G.; SALUKVADZE, M. S.; DIDEBASHVILI, A. A.; GAVAKHISHVILI, N. N.

Studies on Cardiovascular System, some Biochemical, Hematologic and Haemostatic Blood Indications in Old Age. Clinical Cardiology

Gerontalogy, 6th International Congress, Copenhagen, Denmark
11-16 August 1963

SALUKVADZE, N. Sh.

Age of the horizon containing Lirolepis caucasica Rom. and the marl adjacent to it containing Foraminifera in central Abkhazia. Izv. Geol. ob-va Gruz. 4 no. 2:61-64 '65
(MIRA 19:1)

USSR/Cultivated Plants. Potatoes, Vegetables, Melons. M

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77690.

Author : Salukvadze, R.G.
Inst : Georgian Agricultural Institute.
Title : Obtaining Cabbage Seeds in One Year.

Orig Pub: Nauchn. tr. stud. Gruz. s.-kh. in-t, 1957, 6-7, 46-56.

Abstract: No abstract.

Card : 1/1

NEAGU, D.V.; SALUGVADZE, R.G. [Salukvadze, R.G.]

Utilization of the bicomponent systems in bubble chambers. Studii cer.fiz. 10 no.4:733-752 '59. (EEAI 9:5)
(Bubble chamber) (Systems (Chemistry)) (Iodomethane) (Propane)

NEAGU, D. V.; SALUCVADZE, R. G. [Salukvadze, R. G.]

Interactions of the mesons π^+ with hydrogen and carbon when E_{π^+} =78 mev. Studii cerc fiz 12 no.1:39-54 '61.
(EEAI 10:9)

1. Institutul unificat de cercetari nucleare, Dubna(for Neagu).
2. Institutul de fizica al Academiei de Stiinte al R.S.S. Gruzine, Tbilisi(for Salukvadze).

(Mesons) (Hydrogen) (Carbon) (Bubble chamber)
(Propane)

SALUKVADZE, R.G.; NYAGU, D.

Interaction of 78 mev. π^+-mesons in propane. Zhur.eksp.i teor.fiz. 41 no.1:78-80 Jl '61. (MIRA 14:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Cloud chamber) (Mesons)

NYAGU, D.; SALUKVADZE, R.G.

Bubble chamber filled with a mixture of methyl iodine and propane. Trudy Inst.fiz.AN Gruz.SSR 8:183-195 '62.

(Bubble chamber) (Methane) (Propane) (MIRA 16:2)

SALUKVADZE, R.G.; NIYAGU, D.

Absorption of 80 Mev. π^+-mesons by carbon nuclei. Trudy Inst. fiz. AN Gruz. SSR 9:77-84 '63.

Scattering of π^+-mesons on hydrogen and carbon. Ibid.:85-95
(MIRA 17:7)

MGEBRIAN, O. I., CHIGVINADZE, D. I., SALUKVADZE, TS. M.

Crystallography

Weakened surface layer of crystals. Soob. AN Gruz. SSR 12, no. 8, 1951.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

L 23750-66 EWT(1)/EWP(m)/EWT(m)/EWA(d)/ETC(m)-6/EWA(1) JD/WW

ACC NR: AP6007210 SOURCE CODE: UR/0056/66/050/002/0323/0326

AUTHORS: Gamtsemlidze, G. A.; Dzhaparidze, Sh. A.; Salukvadze, Ts. M.; Turkadze, K. A.

ORG: Tbilisi State University (Tbilisskiy gosudarstvennyy universitet)

TITLE: Determination of the slip coefficient of vortices in rotating liquid helium II

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 2, 1966, 323-326

TOPIC TAGS: liquid helium, quantum liquid, flow measurement, vortex tube

ABSTRACT: To eliminate the effect of slip on measurements of the tension of Onsager-Feynman vortex filaments in liquid helium, the authors have constructed an instrument in which the vortices are subjected to continuous action, so that they cannot resume their initial configuration during the observation time, and their stationary deformation can be determined. The instrument comprises a torsion

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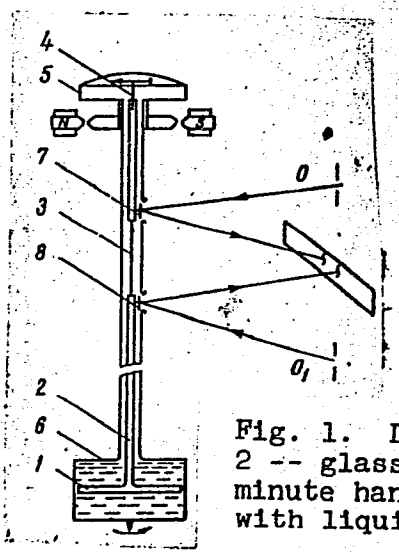

pendulum (Fig. 1) which can be rotated together with the liquid helium by a permanent magnet coupled to a telechron motor. The interaction between the vortices and a solid disc rotating in the helium was determined by measuring the lag of the freely suspended disc relative to a suspension that rotates additionally relative to the disc. An optical system was used to record the relative displacements of the suspension and of the disc. The measured lag amounted to approximately $(4.4 \pm 0.4) \times 10^{-3}$ radians at

Fig. 1. Diagram of instrument. 1 -- Rotating disc, 2 -- glass rod, 3 -- phosphor bronze suspension, 4 -- minute hand of stop watch, 5 -- stop watch, 6 -- vessel with liquid helium, 7, 8 -- mirrors.

L 23750-66

ACC NR: AP6007210

3

a. speed of rotation of 0.038 sec^{-1} and a temperature 1.46K. The slip coefficient is determined from the magnitude of this lag and is in agreement with earlier data obtained by a different method. The authors thank E. L. Andronikashvili for suggesting the topic and valuable remarks, Yu. G. Mamaladze for participating in a discussion of the results, and V. G. Tartinskikh for technical help. Orig. art. has: 4 figures and 6 formulas.

SUB CODE: 20/ SUBM DATE: 27Jul65/ ORIG REF: 002/

Card 3/3 UDC

SALUKVADZE, V. S.

PA 160T17

USSR/Engineering - Welding Equipment Jan 50
Welding, Gas

"Operation of Gas-Pressure Welding Units Under Winter Conditions," V. S. Salukvadze, Engr, 3 pp

"Avtogen Delo" No 1

Suggests three methods for using welding equipment at low outside temperatures: (1) semistationary operation of welding unit in bases located along pipe line at intervals of 20-30 km, (2) heating and reconstruction of separate parts of gas-pressure welding unit, and (3) installation of welding equipment in special pipe-welding combine consisting of covered, heated stand for welding equipment, [redacted]

160T17

USSR/Engineering - Welding Equipment Jan 50
(Contd)

tractor, and pipe carriage. Latter method considered most efficient usage of welding equipment under winter conditions.

160T17

SALUKVADZE, V.S.; L'VOVA, L.A., vedushchiy redaktor; POLOSINA, A.S., tekhnicheskiy redaktor.

[Automatic welding with flux of tanks and pipelines] Avtomaticheskaia svarka pod fliusom rezervuarov i truboprovodov; prakticheskoe rukovodstvo. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1951. 110 p. (MLRA 10:7)
(Electric welding)

AUTHOR: Salukvadze, V.S., Engineer SOV/118-58-1-11/16

TITLE: New Machines for the Laying of Pipe-Lines (Novyye mashiny dlya prokladyvaniya truboprovodov)

PERIODICAL: Mekhanizatsiya trudoyëmkikh i tyazhëlykh rabot, 1958, Nr 1, pp 36-39 (USSR)

ABSTRACT: During the period of the 6th Five-Year Plan, 24,000 km of steel conduit-pipes (predominantly with diameters ranging from 720 to 920 mm) must be laid. This is a high labor and power consuming job, because for each km of pipe-line to be installed, 760 man-days and 26,000 kw/hours must be spent. In recent years the Special Design Office (SKB) of the Vsesoyuznyy nauchno-issledovatel'skiy institut po stroitel'stvu predpriyatiy neftyanoy promyshlennosti - VNIIstroyneft' (All-Union Scientific Research Institute for Construction Enterprises in the Oil Industry), and the design offices of plants, have developed various highly-efficient building machines and mechanisms for the mechanization of many pipe-line laying operations. The ER-5 excavator is a self-propelled trench digging machine for the digging of trenches with vertical walls, 2.2 m deep and 1.2 m wide. The machine has been designed by the SKB Nefte-

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stroymashina and is manufactured by the Moskovskiy eksperimental'nyy zavod (the Moscow Experimental Plant). The working speed of the excavator ranges between 59 and 196 m per hour. Another machine developed by the SKB Neftestroymashina is a pipe-layer of the type T-1530 mounted on the S-80 tractor (lifting capacity - 15 tons). In 1956, an electrically-driven rust remover has been developed to be used before the anti-corrosion coating is applied. A special arrangement has been developed for the cold-wrought bending of steel pipes with a diameter of 700 mm. The Leningradskiy mekhanicheskiy zavod (the Leningrad Mechanical Plant) has designed and is producing a pipe laying machine of the type GB-2 for the laying of pipes under railroad tracks and highways without interfering with traffic. The Institut elektrosvarki imeni Patona AN USSR (Institute of Electric Welding imeni Patona of the USSR Academy of Sciences) has worked out and the Leningradskiy mekhanicheskiy zavod (the Leningrad Mechanical Plant) is producing a highly efficient contact welding arrangement mounted on the TL-3 pipe-layer and equipped with a high pressure oil pump, a compressor, a mobile electric power station of 300 kw, a boom and a

threephase generator; the welding head is attached to the boom. The installation welds from 5 to 6 pipe butts with a diameter of 529 mm per hour.
There are 2 diagrams and 3 photographs.

1. Cables--Installations 2. Pipelines--Installation

SALUKVADZE, V.S., inzh.

New method for priming and shop preparation of pipes. Stroi. truboprov. 3 no.8:16-18 Ag '58. (MIRA 11:11)
(Protective coatings) (Pipe, Steel)

NIKOLAYEV, S.I., red.; SALUKVADZE, V.S., red.; ANDRIANOV, K.I., red.; VASIL'YEV, A.Ye., red.; ZHIKHAREVA, G.P., red.; KRYLOV, P.I., red.; KSHONDZER, G.L., red.; KHRAMIKHIN, F.G., red. [deceased]; CHEREMISINOV, M.M., red. Prinimali uchastiye: ANUCHKIN, M.P., red.; GRIGOR'YEVA, M.B., red.; ZHUKOV, V.I., red.; KALYUZHNYY, N.G., red.; KAMERSHTEYN, A.G., red.; KOZLOVSKAYA, A.A., red.; LAVROVA, N.P., red.; NUSOV, G.I., red.; FAL'-KEVICH, A.S., red.; YERSHOV, P.R., vedushchiy red.; FEDOTOVA, I.G., tekhn.red.

[Safety regulations for constructing steel pipelines] Pravila tekhniki bezopasnosti pri stroitel'stve magistral'nykh stal'nykh truboprovodov. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 235 p. (MIRA 13:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gazovoy promyshlennosti. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (for Anuchkin, Grigor'yeva, Zhukov, Kalyuzhnyy, Kamershteyn, Kozlovskaya, Lavrova, Nusov, Fal'kevich).
(Pipelines) (Industrial safety)

S/133/61/000/011/004/010
A054/A127

AUTHOR: Salukvadze, V. S.

TITLE: A new method of mechanical removal of scale and rust from metal surfaces

PERIODICAL: Stal', no. 11, 1961, 1008 - 1012

TEXT: A new method of mechanical removal of scale and rust from metal surfaces has been developed at the Institute VNIIST. For this purpose a special tool is used, the so-called "needle-cutter", a disk-shaped tool with several thousands of needles (made of high-strength wire) fitted to its perimeter. One end of each needle is fixed to the disk by welding. The needles are closely packed, so that when pressed down on the metal surface they bend slightly at an angle which does not differ greatly from the rear kinematic cutting angle, while the cutting edge of the needle removes a micro-chip from the metal. The cutting edge of the needle is slightly rounded and is self-sharpening. By changing the direction of rotation at regular intervals, the needles can work for 200 - 300 hours without being reground. The needle-cutter is pressed in a special matrix. It is possible to impart various profiles to the milling surface so that the

A new method of mechanical removal...

cutter can be used for pieces of different shape. The needle-cutter differs in operation from disk-shaped metal brushes and cylindrical cutters mainly by the force of pressing to the metal surface (P, kg) and the cutting speed, (V_p). The pressing force for the conventional type of brushes amounts to 3 - 10 kg, with a tightness of 3 - 6 mm; in the new miller the maximum tightness is about 1 - 2 mm, which is obtained by a pressure of 60 - 250 kg. The cutting speed of the new tool is 2 - 2.5 m/sec as compared with 25 - 40 m/sec for the standard disk-shaped metal brush. The needle-cutter can be used for a) cleaning metal surfaces and b) for deep cutting. In the former case the force with which the tool is pressed to the metal surface being worked is constant with comparatively considerable fluctuations in the ratio between feed and cutting speed. For the purpose of cleaning either the needle-cutter or the work piece being cleaned has to be mounted elastically on springs. In deep milling, the needle cutter and the work piece are fixed rigidly, (the distance between the metal surface and the cutter axis is constant); moreover, the ratio between the limit feed rate and the cutting depth is constant at a given cutting speed. The relations between the amount of chips removed, the cutting speed and the pressing stress on the metal surface (for low-carbon steel) are given. It is shown that the efficiency of the device mainly

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A new method of mechanical removal...

depends on the cutting speed. The other parameter affecting the operation of the cutter is the feed rate, which determines the operation speed and which depends on the cutting depth (assuming that the amount of metal removed is constant at a given milling speed). The power requirements of the new milling cutter are characterized by the following data:

Pressing stress, kg	60 - 110	160 - 210
Power-consumption, W-h/g of metal removed	0.6 - 1.0	2.0 - 2.5
Cutting speed, m/sec	0.6 - 2.0	0.6 - 1.6

If a thick metal layer has to be removed, it is more expedient to work with several needle-cutters removing subsequently thin layers at a pressing stress of 60 - 100 kg. The tool has a long service life, which can be prolonged further by changing the direction of rotation. The needle-cutter can be used for the removal of hard hot-rolled scale from carbon-steels, from the hard surface of BT (VT) and OT (OT) type titanium alloys, high-speed cutting steels, 1X18H9T (1Kh18N9T) steel, moreover for polishing shaped components, for deburring welded tubes and the reinforcing of welding seams. The tool operates noiselessly and without causing any dust. Cooling is not necessary, since the tool temperature does not rise above 80°C. The tool will remove layers with a thickness varying between 0.8 and 100 μ or more. There are 8 figures and 1 table.

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A new method of mechanical removal...

S/133/61/000/011/004/010
A054/A127

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po stroitel'stvu magistral'nykh truboprovodov (All-Union Scientific Research Institute for the Construction of Main Pipelines)

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1.1100

32543
S/117/62/000/001/002/006
A004/A101

AUTHOR: Salukvadze, V. S.

TITLE: Further comments on the needle-type milling cutter

PERIODICAL: Mashinostroitel', no. 1, 1962, 25

TEXT: The Vsesoyuznyy nauchno-issledovatel'skiy institut stali (All-Union Scientific Research Institute of Steel) has developed a method of removing scale from metal surfaces by a new tool - the needle-type milling cutter. This tool is a micro-cutter milling cutter with some thousands of cutting edges made of straight, high-strength wire pieces mounted at a definite density. It is possible with this tool to cut the upper metal layer having a thickness of from some thousandths of a millimeter to some millimeters. The tool can be turned into any direction and operate with the feed either in the sense of rotation of the tool or against it, also at any angle relative to the axis of rotation. The characteristic feature of the new tool is that its cutting edge is resharpened automatically in the machining process and, with an alternating sense of rotation, it need not be redressed, being able to continuously operate for 200 - 300 hours. During the working process, one edge of each micro-cutter wears off while the other is re-

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Further comments on the needle-type milling cutter

sharpened. By reversing the sense of rotation of the needle-type cutter, it starts working again with the initial technological characteristics; therefore, all machines and assemblies on which the new cutter type is used should be reversible. The new needle-type cutters can be used for cleaning and cutting operations. In the former case, its operation is characterized by a constant pressing stress of the tool on the surface being machined. Thus it is possible to remove rust, scale, or cut off a thin metal layer from the unmachined surface. For cutting operations both the needle-type milling cutter and the part being machined are rigidly fastened, while exact interrelations have to be observed between the feed speed limit and the depth of cut at the given cutting speed. The needle-type milling cutters are manufactured by pressing according to a special VNIIST technology. The working surface can be given any shape, which makes it possible to use them for various surfaces. The permissible maximum rotation speed of the new cutters is about 300 rpm, the pressure at which the needle-type cutters are pressed against the surface being machined amounts to 30 - 60 kg. There is 1 figure.

Card 2/2

SALUKVADZE, Viktor Samsonovich; GUSAKOV, S.F., inzh., nauchnyy red.; SAF'ONOV, P.V., red.izd-va; RUDAKOVA, N.I., tekhn. red.

[Construction of main pipelines]Sooruzhenie magistral'nykh truboprovodov. Moskva, Gosstroiizdat, 1962. 246 p. (MIRA 15:12)

(Pipelines)

SALUKVADZE, V.S.; KONDRAT'YEV, B.V.; PLASTININ, B.N.

Protective coating of steel pipes. Stal' 23 [i.e. 24] no.4: 340-342 Ap '64. (MIRA 17:8)

SALUM, Kh. [Salum, H.]

Language for describing and modeling of digital structural schemes. Izv. AN Est. SSR. Ser. fiz.-mat. i tekh. nauk 14 no.3:464-471 '65. (MIRA 18:11)

1. Institut kibernetiki AN Estonskoy SSR.

L 4556-66 EWT(d)/EWP(1) IJP(c) BB/GG
ACC NR: AP5024306 UR/0023/65/000/003/0464/0472

AUTHOR: Kh. Salum[44] (H. Salum)

TITLE: A language for the writing down and modeling of the operation of digital structural schemes (TsIMOD)

SOURCE: AN EstSSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 3, 1965, 464-472

TOPIC TAGS: digital computer, computer design, computer language, computer programming, computer technology, automation

ABSTRACT: Lately, considerable attention has been paid to the automation of the design of digital computers and in particular to the formulation of languages and approaches to the modeling of the operation of the existing as well as of future schemes. A universal language established for the modeling of the existing digital computers would avoid the necessity for the creation of a new modeling program each time a new digital scheme is being developed. The new proposed language TsIMOD differs from the previously known by viewing an arbitrary digital scheme as being controllable by microprograms; this makes the new language more universally applicable. The present paper presents a brief semantic description of the language and describes its syntax by a structural diagram. The approach is illustrated on the case of the description of a small computer similar to the M-3. An interpreting program of the M-20 computer contains 2,000 cells in addition to 200 operating cells and constants. The descrip-

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ACC NR: AP5024306

tion of the structural scheme of the computer occupies 240 cells. The time of modeling of a single command is on the average equal to 1.5 sec. "The mask method was proposed to the author in a private discussion by S.D. Mikhnovskiy in 1963." Orig. art. has: 7 figures.

ASSOCIATION: Institute of Cybernetics, Academy of Sciences Estonian SSR (Institut kibernetiki Akademii nauk Estonskoy SSR)

SUBMITTED: 12Mar65 ENCL: 00 SUB CODE: DP, IE

NO REF SOV: 004 OTHER: 005

Card 2/2

KAASIK, U.; SALUM, H.; SINISOO, M.; SILLAMAA, H., kand. tekhn. nauk, retsenzent; AEO, L., red.; LAUL, U., tekhn. red.

[Electronic calculating machines] Elektron-arvutusmasinad. Tallinn, Eesti Riiklik Kirjastus, 1960. 194 p. (MIRA 15:2)
(Electronic calculating machines)

L 21714-65 EWT(d)/EED-2/EWP(1) Po-4/Pq-4/Pr-4/Ps-4 IJP(c)/SSD/AFWL/
AFMD(p)/ASD(a)-5/AFETR/AFTC(p)/RAEM(c)/ESD(c)/RAEM(i)/ESD(dp) BB/GG
ACCESSION NR: AP5002947 S/0023/64/000/004/0344/0358

AUTHOR: Salum, H.; Salum, Kh.

TITLE: One code for describing and simulating digital systems

SOURCE: AN EstSSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 4, 1964, 344-358

TOPIC TAGS: coding, arithmetic unit, model theory, symbolic language, logic system simulation

ABSTRACT: The author proposes a preliminary variant of coding for modeling arbitrary digital systems on a small computer. The initial system data must be represented in the form of a logic network made up of logic elements and registers, the composition of which is characterized by the operators of the individual units, the input vectors of these units, and the output vectors of these units, in accordance with a scheme described by V. M. Glushkov (Sintez tsyfrovykh avtomatov [Synthesis of Digital Automata], Fizmatizdat, M-L, 1962). The main symbols for the syntactic representation of the concepts employed are those used for the

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description of ALGOL-60, to which a symbol for the designation of a second-rank address has been added. To simplify the coding, some of the memory elements have been separated and are controlled by the modeling program. The time of modeling of one operating step of the arithmetic unit of a digital computer similar to the M-3 is 6--10 seconds. Some examples of the applications are presented. The work was performed at the Institut kibernetiki Akademii nauk UkrSSR under the guidance of Academician V. M. Glushkov. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Institut kibernetiki Akademii nauk Estonskoy SSR (Institute of Cybernetics, Academy of Sciences, Estonian SSR)

SUBMITTED: 31Jan64 ENCL: 00 SUB CODE: DP

NR REF SOV: 003 OTHER: 001

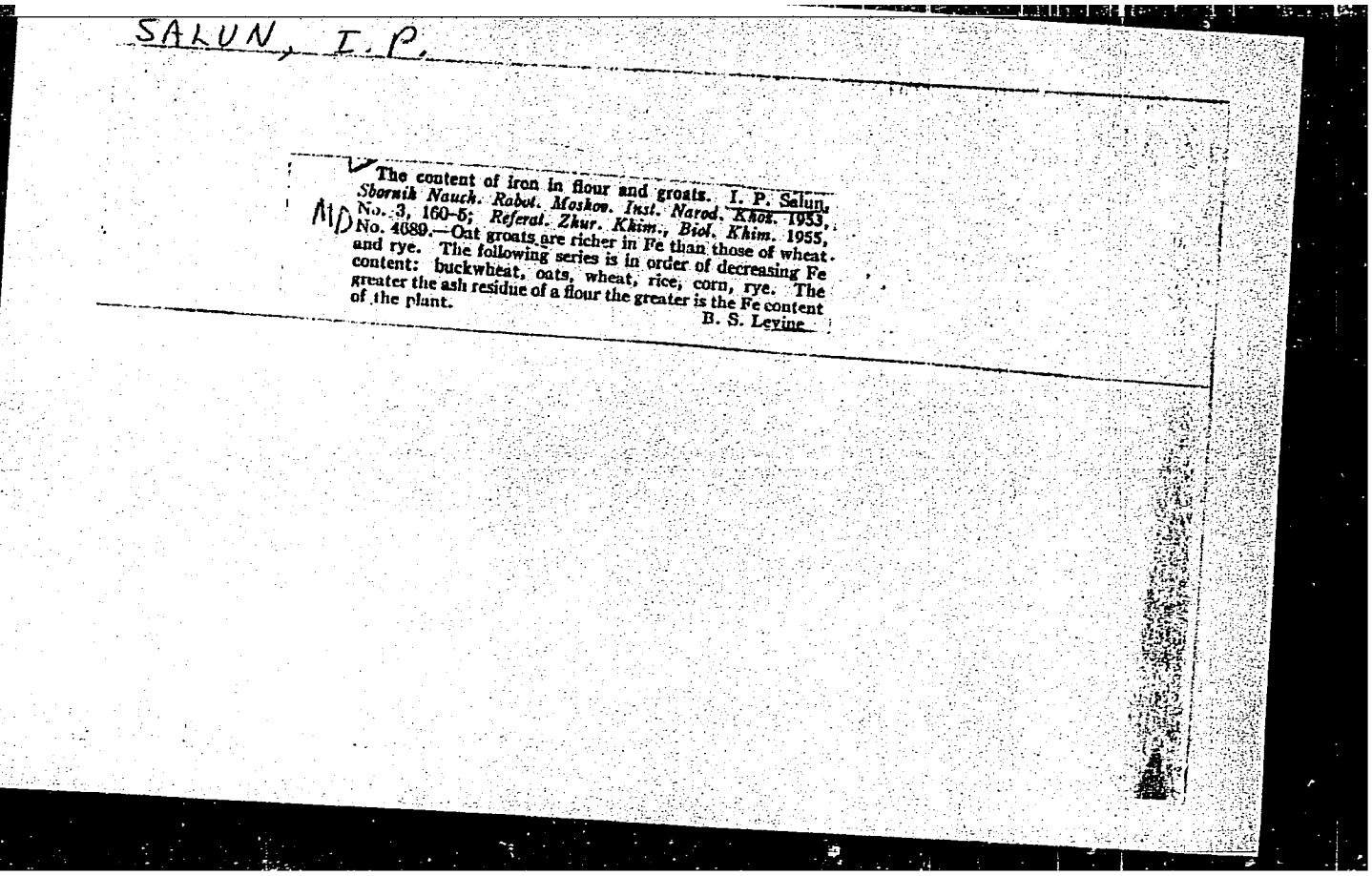
Card 2/2

SALUN, I., kand.tekhn.nauk; MASLENNIKOVA, A., inzh.

Expand the assortment and improve the quality of groats. Muk.-elev. prom. 28 no.5:27-28 My '62. (MIRA 15:5)

1. Institut narodnogo khozyaystva im. Plekhanova (for Salun).
2. Upravleniye torgovli khleboproduktami Ministerstva torgovli RSFSR (for Maslennikova).

(Cereal products)



SALUN, I. P.

MD

The content of iron in flour and groats. I. P. Salun. *Sbornik Nauch. Rabot. Moskov. Inst. Narod. Khoz.* 1953, No. 3, 160–5; *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 4089.—Oat groats are richer in Fe than those of wheat and rye. The following series is in order of decreasing Fe content: buckwheat, oats, wheat, rice, corn, rye. The greater the ash residue of a flour the greater is the Fe content of the plant.

B. S. Levine

SALUN, I.P.; PACHENOVA, R.M.

Quality of the second grade wheat flour. Izv. vys. ucheb. zav.; pishch. tekh. no.2:52-54 '63. (MIRA 16:5)

1. Moskovskiy institut narodnogo khozyaystva imeni G.V. Plekhanova, kafedra tovarovedeniya prodovol'stvennykh tovarov.
(Flour—Testing)

KOLESNIK, Arseniy Adamovich; LOVACHEV, Lev, Nikolayevich; SALUN, Irina Pavlovna; KHOMUTOV, Boris Izotovich; BORISOVA, G.A., red.; SINEL'NIKOVA, TS.B., red.; GROMOV, A.S., tekhn. red.

[The study of food products] Tovarovedenie prodovol'stvennykh tovarov. By A.A.Kolesnik i dr. Moskva, Gos. izd-vo torg. lit-ry, 1961. 511 p. (MIRA 15:2)

(Food)

SALUN S. A.

PA-67T41

USSR/Geology Mar/Apr 1948
Stratification
Tectonics

"New Data on the Stratigraphy of the Upper Paleozoic of the Southeastern Part of Primorye," P.N. Kropotkin, S.A. Salun, 6 pp

"Iz Ak Nauk SSSR, Ser Geolog" No 2

Authors studied Upper Paleozoic cross sections of the mountainous regions of Sikhote-Alin'. Discuss the stratigraphic disposition of the Upper Paleozoic complex based on data obtained. New fauna discoveries permit more detailed division of the Upper Paleozoic deposits into lower, middle, and upper layers.

67T41

USSR/Geology (Contd) Mar/Apr 1948

67T41

SALUN, S.A.

Main tectonic features of the Western Sayans. Biul.MOIP.Otd. geol. 31 no.2:115 Mr-Ap '56. (MLRA 9:8)
(Sayan Mountains--Geology, Structural)